Appendix B

Cultural Resources Report

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ARCHAEOLOGICAL SURVEY OF SHARYLAND UTILITIES-MEXICO TIE TRANSMISSION LINE PROJECT HIDALGO COUNTY, TEXAS

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ABSTRACT

On behalf of Sharyland Utilities and their legal representatives, Sutherland, Asbill and Brennan, LLP, PBS&J was contracted to conduct a survey level archaeological examination of the proposed Sharyland-Mexico Tie project right-of-way (ROW) near McAllen, Texas. The proposed project is intended to provide a 138 kV single-circuit direct current (DC) tie between electrical utility facilities in Texas and Mexico. The circuit will be supported by single-pole support structures that will range in height from 65 to 100 feet (19.8 to 30.5 meters). Foundation footings for the support poles will vary in depth, but could be in excess of 15 feet (4.5 meters). No cultural resources were encountered in the ROW during the archaeological survey. Consequently, no artifacts will be subject to curation.

Given the negative results of shovel testing west of West Military Highway, and the degree of landscape modification due to canal and drainage ditch construction east of West Military Highway, it is unlikely that shallow prehistoric deposits remain intact within the ROW. Deeper mechanical testing efforts are not recommended because the amount of excavation required to test the full depth of project-related impacts would cause far greater disturbance to possible cultural deposits than drilling of the actual utility pole locations. Therefore, once the precise locations of utility poles can be determined and staked in the ROW with a high degree of accuracy, monitoring of construction is recommended in the T^1, T^2, and T^3 terraces at Poles 1, 2, and 3, to record any cultural materials displaced from deeply buried contexts. In the event that human skeletal remains are encountered, construction at the location of the find should be stopped and the Texas Historical Commission notified to determine the proper treatment of the remains.

I. INTRODUCTION

This report has been prepared on behalf of Sharyland Utilities and their legal representatives, Sutherland, Asbill and Brennan, LLP, to document the results of a survey level archaeological examination of the proposed Sharyland-Mexico Tie project right-of-way (ROW) near McAllen, Texas. The need for an archaeological survey was determined via a telephone conference between PBS&J cultural resources staff and Bill Martin of the Texas Historical Commission (THC) on September 16, 2003. Construction of this project will require a Presidential Permit from the U.S. Department of Energy (DOE). Consequently, impacts to cultural resources must be considered under Section 106 of the National Historic Preservation Act. However, because the project will be privately owned and operated, compliance with the Texas Antiquities Code is not required.

The preferred route for the proposed project was selected through a previous route analysis process conducted and documented in a draft environmental assessment currently under review by the Public Utilities Commission of Texas. This report will be appended to a separate environmental assessment that is being prepared by PBS&J for federal review and coordination through the DOE. The proposed project is intended to provide a 138 kV single-circuit DC tie between electrical utility facilities in Texas and Mexico. The circuit will be supported by single-pole support structures that will range in height from 65 to 100 feet (19.8 to 30.5 meters [m]). Foundation footings for the support poles will vary in depth, but could be in excess of 15 feet (4.5 m). Preliminary locations for the eight support poles are illustrated in Figure 1.

The ROW is approximately 4,300 feet (1,400 m) in length (Figure 1) and is described hereafter in three segments. The first segment is from the edge of the Rio Grande (Figure 2a) to the Pole #1 location (Figure 2b). The second segment is a diagonal from Pole #1 across an earthen berm and a raised access road surrounding a holding pond and pumping station (Figure 3a) to Pole #2 on the east side of an International Boundary and Water Commission (IBWC) flood control levee (Figure 3b). The third segment is from Pole #2 across the Union Pacific Railroad track and Farm-to-Market (FM) 1016 (West Military Highway) to the end of the Old Edinburg Canal remnant (Figure 4a). Poles #3 through #8 are located in Segment 3 between the Edinburg Canal berm and a lower berm formed from the excavation of an adjacent drainage ditch (Figure 4b).

Preferred Route

Existing Transmission Line

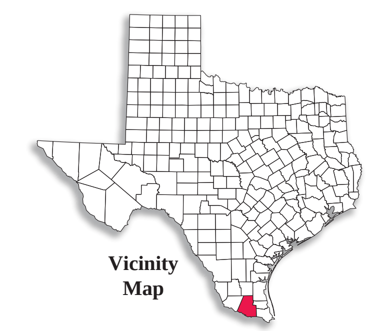
La Lomita Historic District Boundary

Pedestrian Survey

ST1 Sterile Shovel Test

P1 Proposed Pole Location

Historical Marker



north

0 100 200 300 400 meters

400 0 400 800 feet

Date of Photography: August 2000

PBSJ • Engineering • Environmental Consulting • Surveying

Figure 1

MAP OF PROJECT AREA WITH SHOVEL TEST AND PEDESTRIAN SURVEY LOCATIONS

SHARYLAND - MEXICO TIE PROJECT

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Figure 2a. Shovel Test ST1 setting on T^1 terrace, view to northwest.

Figure 2b. Shovel Test ST4 setting on T^2 terrace, view to northeast.

Figure 3a. Pump house on T^1 terrace, view to southwest.

Figure 3b. Spillway on north-south canal and T^2 terrace, view to northwest.

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Figure 4a. Edinburg Canal from spillway to railroad bridge, view to northeast.

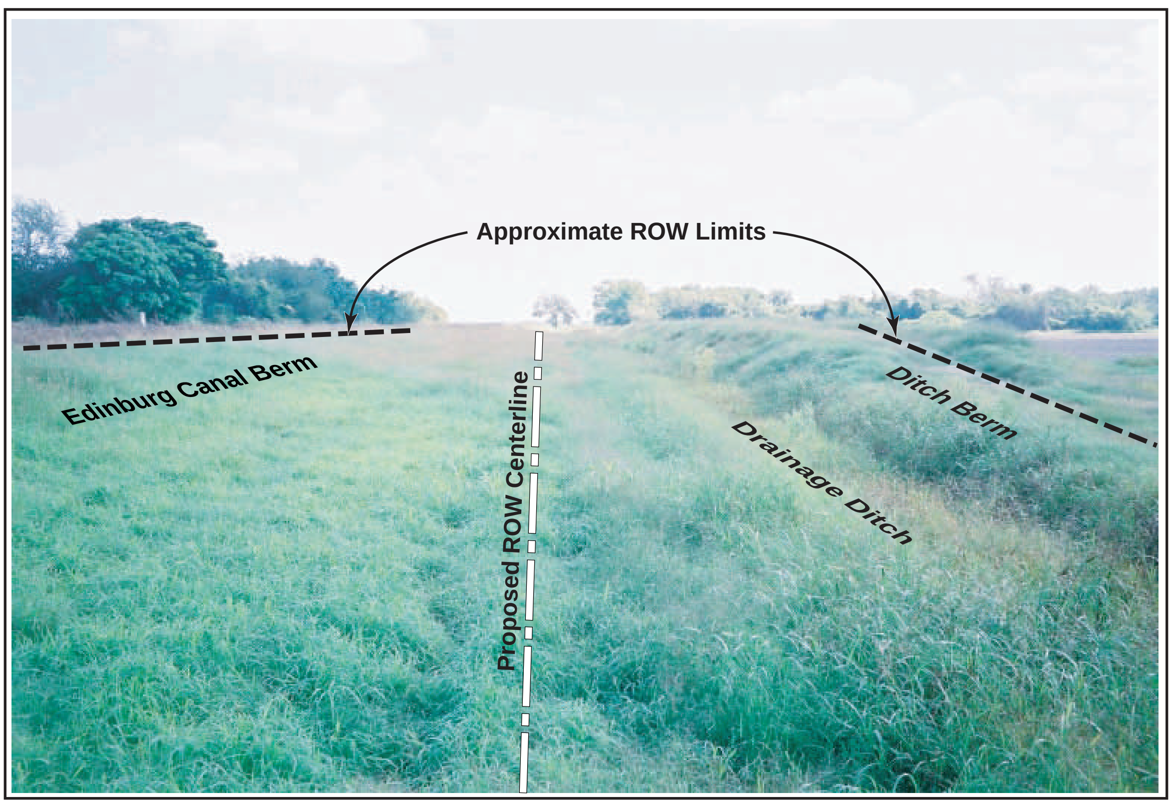

Figure 4b. Staked ROW between Edinburg Canal berm on left and ditch on right, view to northeast from West Military Road.

II. BACKGROUND INFORMATION

The following background section of the report includes information on the environmental and cultural setting of the project area, plus the results of a review of previous archaeological research conducted in the vicinity, and a review of historic literature relevant to the project area.

ENVIRONMENTAL SETTING

The project area is located along the U.S./Mexico border within the Interior Coastal Plains Physiographic Region (Bureau of Economic Geology (BEG) 1996). The plain was formed during the Cenozoic Era as rivers deposited large volumes of sediment into the deltas of the Gulf of Mexico (Swanson 1995). The topography is therefore very flat, with the exception of a small hill, locally referred to as a "Lomita," that rises to approximately 135 feet (41.2 m) in the project vicinity.

Geology

Vicinity bedrock geology consists of Quaternary-aged Alluvium and the Tertiary-aged Goliad Formation. Recent alluvial deposits underlie the ROW. These alluvial materials consist of floodplain deposits associated with the Rio Grande and include mud, silts, and sands (BEG 1976). The Goliad Formation consists of clay, sand, sandstone, marl, caliche, limestone, and conglomerate and reaches a thickness of up to 600 feet (182.9 m) (BEG 1976).

Soils

Three general soil associations occupy the study area, as described by the Soil Conservation Service (SCS [now the Natural Resources Conservation Service (NRCS)] 1981). These Harlingen-Runn-Reynosa silty clay loam is located east of West Military Highway. The Rio Grande-Matamoros Association silt loam located between the river and the IBWC Canal. Camargo silt loams make up the remaining area between West Military Highway and the IBWC Canal.

Vegetation

Hidalgo County lies within the South Texas Plains Vegetational Area as delineated by Hatch et al. (1990). The South Texas Plains includes level to rolling land dissected by streams flowing to the Gulf of Mexico. Elevations range from sea level to approximately 1,000 feet (300 m)above mean sea level (MSL). Average annual precipitation ranges from 16 to 35 inches (40 to 89 cm), occurring mostly in the spring and fall. Summers are often characterized by drought conditions that are frequently of sufficient duration to depress crop growth.

The South Texas Plains vegetation area approximates the Tamaulipan Biotic Province of Texas (Blair 1950). Blair further describes the Lower Rio Grande Valley (Starr, Hidalgo, Cameron, and Willacy counties) as a distinct biotic district (the Matamoran) within the Tamaulipan Biotic Province (Blair 1952). Thorny brush is the dominant vegetation type in the Matamoran District. The Matamoran District has poorer drainage and more-luxuriant vegetation than northern portions of the Tamaulipan Biotic Province.

Climate, edaphic factors, and past human activity have influenced the vegetation of the Lower Rio Grande Valley, resulting in a shrubland climax of mixed-brush and acacia associations. The unique ecology of the Lower Rio Grande Valley is characterized by a combination of climate, vegetation, and wildlife associations unlike anywhere else in the U.S. (Jahrsdoerfer and Leslie 1988). Plants with western desert, northern, coastal, and tropical affinities comprise the vegetation community of the region. Historically, the Tamaulipan brushland was characterized by two vegetation communities, mesquital and chaparral.

The vegetation in the ROW consists of a mixture of agricultural crops, native brushlands, woodlands, and grasslands. Agricultural crops include food, forage, and fiber crops, with cotton, grain sorghum, sugar cane, and citrus being of primary importance. Native plant communities within the ROW include riparian and scrub forests. Riparian and scrub forests are associated with the Rio Grande and consist of several intergrading habitat types of taller stature than adjacent vegetation communities.

Fauna

The fauna of the Tamaulipan Biotic Province includes numerous neotropical species, numerous grassland species that also range north of the province, some Austroriparian species from the east, and a small number of Chihuahuan species from the west (Blair 1950, 1952). Numerous neotropical invertebrates and vertebrates are limited in their U.S. distribution to the Tamaulipan Biotic Province, and many are found within the U.S. only in the Lower Rio Grande Valley. The ROW supports an abundant and diverse avifauna on a seasonal basis.

CULTURAL SETTING

The prehistory of the Rio Grande Plains of Texas is poorly understood. Archaeological investigations have primarily been limited to surface collections by professional and amateur archaeologists. To date, no extensive controlled excavations have been undertaken in the area and, except for occasionally-found burials, definable subsurface components and/or stratigraphy are only rarely found south from Baffin Bay to the Rio Grande. The sections below briefly summarize developmental stages in the region.

Paleoindian

The earliest evidence of man in the Rio Grande Plains Archeological Region is recognized as the Paleoindian period. This period dates from about 10,000 B.C. to 6,000 B.C. Sites from this period are recognized based on diagnostic dart point types such as Clovis, Plainview, and Angostura. During the Paleoindian period, great expanses of land were inundated by the rising sea levels. The sea levels were increasing due to the melting of glacial masses at the end of the Pleistocene. The final rise in sea level began about 18,000 years ago, with the present coastline being achieved about 3,000 years ago (Brown et al. 1976).

In the greater south Texas and northeast Mexico area, several Paleoindian sites have been reported, and in a few cases excavated. At the Falcon Reservoir, in Starr County, the Evans site on the U.S. side of the Rio Grande yielded an artifact possibly associated with extinct megafauna (Cason 1952). On the Mexican side of the Rio Grande, archaeologists have found flint debitage and an artifact eroding out of a mammoth locality (Krieger n.d.). A Plainview point was found at another Falcon Reservoir site (de la Borbolla and Arroyo de Anda 1953) and excavations by Weir (1956) and Newton (1968) isolated a Paleoindian component at the La Perdida Site, also in Starr County, as identified by Plainview, Meserve, Angostura, Scottsbluff, and Clovis projectile points.

Archaic

As the climate changed and the big game animals died out, there was a transition into the Archaic period. Recognized Archaic dart points in the Anderson collection (see previous Archaeological Investigations) suggested the presence of Archaic peoples in the area. South of the project area, MacNeish (1958) published pertinent information, including a chronology for the Archaic in Tamaulipas, after three seasons of survey and excavation. He considered diagnostic artifacts and geographic distributions in defining three Archaic complexes and phases for northern Tamaulipas. They are, from earliest too latest, the Nogales, Repelo, and Abasolo complexes, and span the period from 5,000 B.C. to A.D. 100. He made comparisons to Archaic materials from the Falcon Reservoir where the Archaic Falcon focus was defined with an estimated temporal span of approximately 5,000 B.C. to A.D. 500 or 1,000 (Suhm et al. 1954).

Following the Archaic, the Late Prehistoric period, termed Neo-American by Suhm et al. (1954), is the last prehistoric period in the Rio Grande Archeological Region. This period is marked by the presence of arrow points in the artifact inventory. Although, in many areas of Texas, ceramics appear on archaeological sites during this stage, ceramics are relatively scarce in the Lower Rio Grande Valley.

Late Prehistoric

The bulk of our knowledge of the archaeology of south Texas is from the Late Prehistoric. MacNeish (1958) has defined two closely related complexes, the Brownsville and Barril, for the Lower Rio Grande delta. Common to both complexes are shell disks, pierced shell disk beads, plugs made from a columella that are round in cross section, rectangular conch shell pendants, mollusc shell scrapers, and Starr, Fresno, and Matamoros projectile points. Intrusive pottery of Huastec origin from southern Tamaulipas appears in occupation sites and in burials (Anderson 1932; Mason 1935; MacNeish 1947).

The first Europeans, the Spanish, encountered indigenous people speaking the Coahuiltecan language in southern Texas and northeastern Mexico (Salinas 1990). The Coahuiltecan language is similar to the Karankawan, which was spoken by coastal peoples north of Corpus Christi up to the west side of Galveston Bay (Swanton 1940). From Corpus Christi, the Coahuiltecan area extended northwestward to San Antonio, westward to just below the point where the Pecos River empties into the Rio Grande, and southward into Nuevo Leon, northeast of Coahuila, northern San Luis, Potosi, northeast Zacatecas, and northern Tamaulipas. Coahuiltecan peoples are linguistically related to the Hokan groups of languages in California (Sapir 1920; Swanton 1940; Ruecking 1955).

Indian sites from the final stage, Historic Indian, are distinguished by the presence of European and non-aboriginal American trade goods that date from the sixteenth through mid-nineteenth centuries. Debris on historic Indian sites indicates a continuing nomadic hunting and gathering existence. The best account of the native people's of Texas comes from the chronicle of Alvar Nunez Cabeza de Vaca, a survivor of a Spanish shipwreck in 1528 (Covey 1972). The names and locations of some historic Coahuiltecan groups are listed in the *Handbook of Texas*, Volume III (Branda 1976). By the 1850s, a combination of European-introduced diseases and tribal wars stimulated by Europeans had decimated the Indians of south Texas (Campbell 1958).

Research has indicated that the Coahuiltecans probably never existed as a single tribe (Hester 1999). Rather groups with similar language were identified by the Spanish as Coahuilteco presumably because the native homeland of many groups was Coahuila, Mexico. There is no extant Coahuiltecan tribe today, however there is a group based in the San Antonio area that calls itself the Tap Pilam-the Coahuiltecan Nation. They are not a federally recognized tribe at this time, but the tribe has filed a petition for recognition by the Secretary of the Interior that the group exists as an Indian tribe (Federal Register 1998).

There are no indigenous tribes extant in the area. Indian tribes that have in the past inhabited this part of Texas include the Comanche, Kiowa, and Lipan Apache. The Comanche and the Kiowa came into south Texas following herds of wild mustangs and bison. The traditional homeland of the Lipan Apache included the area between the Texas Panhandle and the Hill Country of Central Texas, but there were incursion by the Lipan Apache into south Texas.

Spanish Exploration and Settlement

The Spanish are recognized as the first European nation to claim territory that encompasses the Lower Rio Grande Valley. Alonso Alvarez de Pineada is believed by many to have been the first European to reach the mouth of the river, arriving in 1519 (Scott 1937; Stambaugh and Stambaugh 1954). Pineada, who was commissioned to map and explore the Gulf of Mexico by Francisco de Garay, Governor of Jamaica, discovered a large river with a grove of palm trees at its delta. He subsequently named this waterway Rio de las Palmas. Historians do not agree as to which river Pineada actually discovered. Some maintain that it was the Rio Grande; while others believe it was the Rio Soto la Marina in Tamaulipas, Mexico (Hill 1926). Weddle (1985) supports that latter contention, pointing out that the Rio Soto la Marina was known until the mid-eighteenth century as the Rio de la Palmas, while one of its southern tributaries continues under that name today. Despite the uncertainty surrounding the exact location of Rio de las Palmas, Pineada's efforts spurred further exploration of territory in the region.

In 1520, a year after Pineda's trip, Garay sent an expedition led by Diego de Camargo to colonize the territory. Although unsuccessful because of conflicts with native tribes in the area, this effort demonstrated the strong desire of the Spanish to consolidate their claims to the region. In addition, Camargo is credited with naming the narrow waterway that extends between Brazos and Padre Islands. He called this pass Brazos de San Iago, in honor of Saint James Day. A.A. Champion, a local historian, notes that Iago is the ancient form of Diego which, translated into English, is James. In subsequent years, the name evolved into Brazos Santiago, by which it is known today.

Several other attempts were made by the Spanish to explore and settle the Lower Rio Grande Valley during the sixteenth century, including expeditions led by Gonzalo de Ocampo in 1523, Sancho de Canielo in 1528, and Pedro de Alvarado in 1535; however, no permanent settlements were established (Rogers 1996). After these efforts, Spanish activity was severely curtailed and no serious attempts were made to colonize the Lower Rio Grande Valley until the mid-eighteenth century.

Spanish activity during the intervening 200 years was primarily military in nature, as efforts were made to locate and counter expeditions of, or settlements established by, other European nations. Such intrusions were regarded as direct threats to Spanish sovereignty and, despite an occasional lack of concrete evidence for their existence, were always taken seriously. In 1638, for example, rumors of a Dutch invasion at the mouth of the Rio Grande prompted the Spanish to send Jacinto Garcia de Sepulveda and his men to find these intruders. None, however, were found (Stambaugh and Stambaugh 1954; Ruecking 1955). In 1685, Alonso de Leon led the first of several expeditions assigned to locate Fort Saint Louis which had been established near Lavaca Bay by the Frenchmen Rene Robert Cavalier, Sieure de La Salle. De Leon's search eventually took him throughout the southern Texas coastal areas and he is believed to have crossed the Arroyo Colorado in mid-Cameron County. De Leon eventually discovered the fort, abandoned (Stambaugh and Stambaugh 1954; Tyler 1996).

By the mid-eighteenth century, Spanish authorities demonstrated renewed interest in settling land that included the Lower Rio Grander valley, as well as much of modern day south Texas and northern Mexico. Although Spain had retained control of this territory, which was known as Nuevo Santander for more than 200 years, very little was known about its land, resources, and vegetation. Plans were made to inspect the region between Tampico and the San Antonio River and, on September 3, 1746, Jose de Escandon was made lieutenant of the viceroy of Seno Mexican and conquistador and governor of the province of Nuevo Santander. This appointment marked the beginning of Escandon's 23-year commitment to the colonization of these lands and proved to be a turning point in the development of the Lower Rio Grande Valley. In 1747, Escandon dispatched four expeditions to the region and personally led one that took him and his party to the Rio Grande and nearby environs. Captain Joaquin de Orobio Bazterra, commander at Presidio La Bahia del Espiritu Santo, led another expedition that explored territory between the Nueces River and the Rio Grande. These and the other parties met near the mouth of the river (Hill 1926).

With the knowledge acquired from these expeditions, Escandon instigated a colonization policy that resulted in the establishment of 23 settlements. Departing from traditional Spanish practice which relied heavily upon a strong military presence, towns founded by Escandon were, therefore, dependent primarily upon civil defenses. None of his settlements were located in the project area.

In the second half of the eighteenth century, organized settlement began to expand toward the Gulf of Mexico. In 1765, San Juan de los Esteros, a small ranching village populated by residents of Reynosa, was established about 22 miles (35 kilometers) from the mouth of the river. Initially, the settlement struggled to survive, but in 1795, a large influx of colonists from Nuevo Leon assured its prosperity. A year later is was renamed Nuestra Senora del Refugio, following Mexican independence from Spain, its name was changed again, this time to Matamoros in honor of a Mexican revolutionary war hero. Fronton, a small fishing village, was established in the 1770s on a site that eventually became Port Isabel (Tyler 1996).

<u>Mexican Period and an Independent Texas</u>

Mexican independence from Spain in 1821 contributed to the development of the Lower Rio Grande Valley. In the early nineteenth century the first land grant issued in the region was awarded by the newly created state of Tamaulipas (formerly Nueva Santander) to Jose Salvador de la Garza. As Spain's claim to the area yielded to the Mexican Revolution in 1821, settlement in the area was sparse but focused into a few key port towns along the Rio Grande. Mexico, like Spain, continued to encourage immigration and settlement in the lower Rio Grande, especially along the navigable stretch of the river between the Gulf and Roma in Starr County. Most of the Mexican landowners were isolated ranchers.

However, as trade increased and Matamoros grew into an active port, many Americans and Europeans came seeking economic opportunities. Unlike the Mexicans, however, these individuals were, for the most part, merchants (Graf 1942). Charles Stillman, a native of Connecticut, was one such individual and he later became a dominant force in the economic development of the region. He settled in Matamoros in February 1828 and, along with his father, operated a profitable mercantile business. He later joined forces with Mifflin Kenedy and Richard King in a steamship operation that transported goods from the mouth of the Rio Grande to Matamoros during the mid-nineteenth century.

Perhaps the most significant development during this period was the establishment of a sea port in the Lower Rio Grande Valley in 1823. Prior to this, Vera Cruz had served as Spain's sole open port in Mexico which made the transporting of goods to more remote areas in the colony difficult, expensive, and time consuming. With the opening of a port in Matamoros, however, trade with the rich hinterlands of northern Mexico was more accessible. Martin de Leon, who later founded the town of Victoria, Texas, initiated commercial shipping to the Rio Grande region when he chartered a schooner in New Orleans that sailed to Brazos Santiago. From there, the goods were transported overland to Matamoros for distribution.

Another important event of the era was the inauguration of steamship service along the river. Henry Austin, a cousin of Stephen F. Austin, arrived with his steamer Ariel from New York on June 29, 1829. Despite Austin's grand intentions, the operation of the steamboat was not profitable. The difficulty of navigation on the river and the lack of cooperation and participation among Mexican merchants were prime factors for its abandonment in September 1830. Austin then took the vessel to the Brazos River (Graf 1942). Although its impact on commercial trade was hardly noticeable, the arrival of Austin's steamboat ushered in an era that gained considerable significance in subsequent decades.

Texas' struggle for independence, for the most part, bypassed the Lower Rio Grande Valley, as most military and political events took place further north. Following the conclusion of the war, 4,000 soldiers of Santa Anna's defeated army converged on Matamoros and depleted much of the available food supplies. Commerce and trade in the town and nearby areas diminished with this sudden influx, but its effects were only temporary. Soon, the economy rebounded and residents went on about their business (Thompson 1965).

After the Republic of Texas was officially formed and was truly independent of Mexico, both countries claimed territory between the Rio Grande and Nueces River. The inability of each government to control effectively or exert much influence in this area left many residents vulnerable to attack by Indians and roaming bands of soldiers of both countries. Another event that increased tensions occurred in 1839 when Francisco Viaduarri and others declared that a new nation, the Republic of the Rio Grande, was being formed from the Mexican states of Nuevo Leon, Chihuahua, Coahuila, and

Tamaulipas, including the Lower Rio Grande Valley of Texas. Unlike the Texas war for independence, this rebellion was successfully quelled by Mexican forces (Tyler 1996).

The Mexican War

Disputes between Mexico and the United States erupted into full-scale warfare over the location of the boundary between the two countries. The United States recognized the Rio Grande as the sole boundary, while Mexico recognized the Rio Grande only to the headwaters of the Nueces River and from that point following the Nueces to its mouth near Corpus Christi. Present day Hidalgo County was part of the disputed territory during the Mexican War. The dispute reached an impasse and President James Polk, in an effort to reinforce the American position, ordered General Zachary Taylor's army to the disputed area. Taylor's infantry, artillery, and support units arrived in Corpus Christi via steamer from New Orleans, while his dragoons traveled overland from San Antonio. Personnel from his army surveyed the area across from Matamoros, selecting a site for the army's encampment.

Taylor's army arrived at the Rio Grande following a brief skirmish with Mexican irregulars at Arroyo Colorado. Taylor immediately began receiving dispatches from the Mexican commander General Mejia ordering the Americans to withdraw from the Rio Grande. When Taylor refused, the Mexican army placed artillery along the riverbank south of the fort. Taylor responded by placing his own heavy artillery in position to fire on Matamoros and ordered his chief engineer, Captain Joseph K.F. Mansfield to construct defensive works. Mansfield constructed a six-sided earthen bastion, 800 yards (731.5 m) in circumference, with walls 8.5–9 feet (2.6–2.7 m) in height and surrounded by a ditch 20 feet wide (20.1 m) and 9–10 feet (2.7–3.3 m) deep. The fort's earthen ramparts were topped by wood and mud parapets and the bastions were protected by sandbag merlons between gun embrasures (Mahr-Yanez and Perttula 1995). Before the fort could be completed, Taylor was informed by Captain Walker of the Texas Rangers that Mexican General Arista, now commanding the Mexican forces, had crossed the Rio Grande downstream from the American army and was marching towards the American base at Port Isabel. Taylor, in a night march, beat the Mexican army to Port Isabel and secured his supply line. In his absence, he left Major Jacob Brown in command of the newly constructed fort, along with the 7th U.S. Infantry.

On May 3 the Mexican artillery opened fire on the fort. Major Brown responded with his artillery, destroying one Mexican gun and forcing the Mexicans to reposition the others. The Mexican infantry next attacked, but were repulsed. In an artillery bombardment on May 6, Major Brown received a mortal would, dying on the afternoon of May 9.

After securing his supply base at Port Isabel, General Taylor returned to relieve the fort's defenders. On the return march his forces encountered those of General Arista at Palo Alto and Resaca de la Palma and inflicted severe casualties and forcing the Mexican army to retreat. Upon learning of Major Brown's death, Taylor ordered the fort named after him and pursued the Mexican army into Matamoros.

All subsequent fighting took place within Mexico, thus, the battles at Palo Alto and Resaca de la Palma were the only ones north of the Rio Grande. Hostilities ceased with the signing of the Treaty of Hidalgo on July 4, 1848. Provisions of this agreement established the Rio Grande as the boundary between the two countries, but also recognized land titles issued by the Spanish and Mexican governments. All public lands, however, were granted to the State of Texas (Thompson 1965).

At the conclusion of the war with Mexico, counties were formed throughout southern Texas. In 1852 Hidalgo County was formed and named for Miguel Hidalgo y Costilla a Mexican patriot. At that time there about 45 ranches in the county many of which eventually became villages due to the parceling of land from one generation to another (Tyler 1996). Small communities such as La Habitación, Relampago, and Penitas had their origins in these ranches. In 1852 La Habitación was renamed Edingburgh and made the county seat. The primary economic endeavors of many of the villagers were transportation, agriculture, and trade with Mexico.

The Rise of the Agricultural and Tourist Industries

Throughout the latter nineteenth century and into the early twentieth century lower Rio Grande Valley agriculture was focused around livestock ranching with crop production limited to a subsistence level. Ranches were distributed up and down the river within the large "porciones" each of which had river frontage and large areas of native pasture. Many of the cattle raised in the region were shipped by boat from small local port towns to larger market centers in Mexico and the United States.

Agriculture and the economy of the lower Rio Grande dramatically diversified during the early years of the twentieth century. With the arrival of rail transportation, it suddenly became possible to bring in large-scale pumping equipment needed to irrigate large tracts of fertile land adjacent to the river. The Louisiana-Rio Grande (LRG) Canal Company Irrigation System is a landmark example of this major change in agricultural technology. Constructed in 1909 by H.N. Pharr, J.D. Kelly, John C. Conway, and A.W. Roth, the LRG Canal Company supplied water from the Rio Grande to arid land that was converted from pasture to cultivated cropland and citrus farms. The company built two pumping stations and an elaborate irrigation system which was highly successful. The company integrated into Hidalgo County's Irrigation District No. 2, located outside of the project area. As irrigated water became available to the rich and fertile delta region, agricultural production increased dramatically. The citrus industry was started in 1907 when W.A. Fitch planted a commercial scale grapefruit orchard near Mercedes.

The tourist industry has become a dominant force in the local economy in recent years although its early development can be traced to the 1920s. Natural and historical resources within the area have provided a focus for this aspect of the local economy. Historical places like Chimney Park near the project area (Figure 1) have been redeveloped to accommodate the seasonal influx of winter tourist from northern states. Similarly, the establishments of natural parks, like Bentsen-Rio Grande Valley State Park, have served to expand this aspect of the area economy. This trend toward natural and heritage tourism is being encouraged through studies sponsored by local environmental consortiums (Consortium of the Rio Grande 1997) and the THC (Sanchez et al. 1991), both of which have surveyed the lower Rio Grande Valley and made recommendations regarding resources that are naturally and culturally important.

PREVIOUS ARCHAEOLOGICAL INVESTIGATIONS

The earliest and most extensive work in the south Texas area is that of A.E. Anderson. From 1908 to 1940, Anderson collected and kept records on data from the south Rio Grande Valley and adjacent part of Tamaulipas, Mexico. In 1932, he published a brief description of his artifacts from the Brownsville area (Anderson 1932). Many professional archaeologists have relied heavily on the Anderson Collection as a supplement to their own survey data in making interregional comparisons and in establishing chronological schemes (Sayles 1935; Jackson 1940; Campbell 1947; MacNeish 1947, 1958; Prewitt 1974).

Anderson identified general topographic settings for prehistoric sites. Prewitt (1974) concluded that there were five distinct settings were sites were most frequently located. These are alluvial terraces adjacent to streams or rivers; broad upland areas that are often remnants of Pleistocene alluvial terraces; clay dunes, particularly where these face lagunas and inland lakes; on resacas; and on the barrier islands. Building upon these previous investigations, Mallouf et al. (1977) developed a predictive model which facilitated the location of sites through survey (Day 1981; Day et al. 1981; Etchieson and Boyd 1982; Mercado-Allinger 1983; Hall et al. 1987; Quigg et al. 1989). In all, 175 prehistoric/historic sites were located along drainage ditch alignments in Hidalgo and Willacy counties using these models (Bouseman et al. 1990).

Additionally, Mallouf et al. (1977) cited eolian depressions or playas as major water sources that attracted wildlife and vegetation, and therefore, sites. Some sites were located on more elevated areas, supposedly, to take advantage of several playas (Bouseman et al. 1990). The types of prehistoric sites encountered in south Texas include open sites, burned rock middens, shell middens, clay dune sites, lithic sites, rockshelter sites, and special use sites such as isolated burials, cemeteries, rock art sites, caches, and structures (Black 1989). Historic site types include archaeological remains and architectural components from shipwrecks, industrial buildings, opera houses, schools, forts, courthouses, and other civic buildings, hotels, bridges, post offices, stores, ranches, and houses.

Espey, Huston and Associates, Inc. (EH&A) (now PBS&J) conducted several archaeological investigations in Hidalgo County. These include the survey of a transmission line corridor for the Magic Valley Electric Cooperative (EH&A 1983) and the archaeological assessment of the Central Power and Light Company's Cross Valley Tie transmission line (EH&A 1992). EH&A archaeologists also conducted archaeological investigations in Hidalgo County for Central Power and Light Company's transmission line relocation in the Cimarron Subdivision and for Central and South West Services'

Mexico Tie Transmission Line Project (EH&A 1994) and for a cultural resources survey for a previous Sharyland transmission line project (Schmidt 1998).

Other major archaeological investigations in Hidalgo County include the Hidalgo-Willacy Drainage Ditch Survey (Prewitt and Day 1981; Prewitt and Mercado-Allinger 1983; Prewitt 1986; Hall et al. 1987; Quigg et al. 1989; Bouseman et al. 1990) and the survey conducted for the Hidalgo County Irrigation District No. 16 (Etchieson and Boyd 1982). Archaeological work has been conducted at the Bentsen-Rio Grande Valley State Park (Hartmann et al. 1995), for the Mission Industrial Site Infrastructure Project (Houk et al. 1995), and for the Colonias Wastewater Treatment Assistance Program Project (Jones et al. 1995). A cultural resources survey was also completed for the Texas Department of Criminal Justice, Edinburg Facility (Rader and Leach-Palm 1995). Archaeological and geomorphological investigations and historic research have been conducted for the Pharr-Reynosa International Bridge (Boyd et al. 1994) and for the Anzalduas International Crossing (Keller 1995).

Investigations in other parts of south Texas include the excavation of a large Archaic cemetery named Loma Sandia, 41LK28, in Live Oak County. Dart points, stone pipes, shell ornaments, and deer antlers are among the grave goods found with some of these burials (Taylor and Highley 1995). At Choke Canyon Reservoir, testing and excavation of many Archaic and Late Prehistoric sites revealed buried Archaic occupations with dates of 2,400 B.C. and 3,300 B.C., and provided the initial data on the Archaic of interior south Texas (Hester 1980).

RESULTS OF THE LITERATURE/RECORDS REVIEW

The records review and literature search for the Sharyland Utilities Project in Hidalgo County were conducted at the Texas Archeological Research Laboratory (TARL) and at the THC. The files at TARL were used to identify previously recorded archaeological sites near the project area. The files at the THC were used to learn if any sites listed on or determined eligible for listing on the National Register of Historic Places (NRHP) are within or near the ROW. The THC files were also used to identify State Archeological Landmark (SAL) and State Historical Markers in the vicinity of the study area.

The records at TARL identified over 176 archaeological sites in Hidalgo County, none of which are located in the ROW. The THC files identified 15 NRHP listed properties three of which are historic districts. The La Lomita Historic District is nearby the ROW to the south (see Figure 1). The THC's Texas Historic Sites Atlas website also identifies official state historical markers for the "Spiderweb Railroad" and Juan Davis Bradburn (see Figure 1). One branch of the original early twentieth century "Spiderweb Railroad" still runs through the ROW, although it is now owned and operated by the Southern Pacific railway system. Juan Davis Bradburn was an Anglo military officer who was a leader of Mexican troops in Mexico's early nineteenth revolution against Spain. His subject marker reports that his burial location is unknown, but may be on the nearby hill called La Lomita.

The registered boundary of the La Lomita historic district encompassed 122 acres (49.4 hectares) of a much larger ranch given to the missionary Oblate Fathers by Rene Guyard, a native of France who acquired the La Lomita porcione in 1851 (Sanchez et al. 1991). The Oblate Fathers constructed a simple chapel in 1865 that was destroyed by flooding and replaced by a second small chapel constructed in 1899 and restored in 1949. Two other significant historic structures on the property include a two-story frame convent and St. Peter's Novitiate, a grand Mission style structure surmounting the landmark hill for which the original La Lomita ranch was named. Both of these were constructed in 1912, and have since been integrated into a redeveloped teaching complex with multiple bunkhouses, classrooms and offices. Plans to build greenhouses and cultivate land for row crops were not completed and the hilltop today is densely covered with trees and dense vegetation. Since 1975, when the district was nominated for National Register listing, portions of the registered site boundary have been subdivided, consequently disconnecting the old La Lomita Chapel, now operated as a county park, from St. Peters Novitiate and the hilltop for which it is named. The La Lomita Chapel and St. Peter's Novitiate are both marked with official state historical markers (see Figure 1).

In addition the recorded sites identified above, the THC's heritage tourism assessment of the lower Rio Grande Valley (Sanchez et al. 1991) identifies the Hidalgo Irrigation Pump Plant, Chimney Park, and El Granjeno Cemetery as important visible remnants of the early twentieth century rise of industry and irrigation agriculture and the influence those developments had on the many small river communities. None are in the ROW. Notably, the lower Rio Grande River itself has been nominated as an American Heritage River for its combination of natural and cultural resources that represent the long history of the area.

The project area, like much of the lower Rio Grande Valley, has undergone, and continues to undergo, dramatic urban and suburban expansion. Only in rare instances do historic sites, like Rancho Toluca near Progreso, survive sufficiently intact to represent the valley's Spanish ranching heritage. Similarly, historic sites representing the missionary heritage are exceedingly rare in the rapidly modernizing environment of the lower Rio Grande Valley. Among the few surviving missions are La Lomita Chapel (1899/1949) and St Peter's Novitiate (1912), both of which have undergone dramatic setting changes and are now cut-off from each other by modern road and levee systems (see Figure 1). These missions are increasingly surrounded by dense residential subdivisions that occupy the mission's former expanse of ranch land.

III. FIELD RESULTS

An interview between PBS&J archaeologists and Dr. David O. Brown, an archaeologist currently working in the Mission/McAllen area, suggested that areas within the Rio Grande's flood plain have a high probability of containing deeply buried archaeological sites. Although the eastern portion of the project does not appear to contain ancient river channel formations locally called "resacas," the river's natural flood plain once extended well beyond the current IBWC flood control levee. Subsequent consultation between PBS&J archaeologists and Bill Martin, of the THC, confirmed Dr. Brown's analysis and determined that the eastern portion of the proposed ROW was also thought to have a moderate to high probability for containing archaeological sites, although most likely in surficial or shallowly buried contexts potentially accessible through shovel testing. Based on this archaeological probability information and the potential for project-related impacts to cultural resources, intensive archaeological survey was recommended by PBS&J for the entire ROW.

ARCHAEOLOGICAL SURVEY METHODS

Archaeological fieldwork was conducted on October 20, 2003, by Dr. Boyd Dixon and Laura Acuna, PBS&J archaeologists, in accordance with the Archaeological Survey Standards for Texas provided by the THC for properties of 200 acres (80.9 hectares) or less. This phase of investigation was conducted to locate shallow prehistoric and historic remains along the ROW. Information was also gathered to assess the possible need for further investigation of more deeply buried remains at support pole locations. Shovel testing at approximate 100 feet (30 m) intervals was conducted within 1,000 feet (300 m) of the river where possible, up to the west side of West Military Highway (Figure 1). East of West Military Highway, the pedestrian survey was conducted without shovel testing due to the disturbed nature of the ROW as it follows the edge of the Edinburg Canal and an adjacent drainage ditch.

ARCHAEOLOGICAL SURVEY RESULTS

Four shovel test units (ST1–ST4), measuring approximately 35 centimeters (cm) (1 foot) in diameter, were placed at 90 feet (30 m) intervals between the edge of the Rio Grande and the Pole #1 location. Two shovel tests (ST5–ST6) were then placed east of a north-south oriented canal, along the south side of the Edinburg Canal and below its associated berm. This area located west of the Union Pacific Railway track and West Military Highway is covered in dense vegetation and was still muddy from recent rains, so only an 250 feet (80 m) interval between shovel tests was possible. The total distance spanned between the six shovel tests was approximately 1,000 feet (300 m). No prehistoric or historic period cultural remains were encountered in the six shovel tests. Their stratigraphic information is recorded in Table 1.

TABLE 1

PBS&J Shovel Tests Conducted on Sharyland-Mexico Tie Project

ST Number	Location	Centimeters Below Surface (cmbs)	Content	Description
ST1	90 m south of Pole 1	0–30 cmbs	None	Medium brown clay silt loam with gravel lense
		30–70 cmbs	None	Light brown silty loam
ST2	60 m south of Pole 1	0–70 cmbs	Twentieth century refuse	Light gray sandy silt
ST3	30 m south of Pole 1	0–60 cmbs	Land snails	Light gray sandy silt
ST4	1 m south of Pole 1	0–60 cmbs	Land snails	Gray brown loamy clay
ST5	1 m north of Pole 2	0–50 cmbs	None	Gray brown silty sand loam
		50–60 cmbs	None	Dark brown silty A-horizon
ST6	80 m north of Pole 2	0–10 cmbs	Twentieth century refuse	Gray brown sandy silt
		10–20 cmbs		Dark brown silty A-horizon
		20–40 cmbs	None	Gray silty clay at water table

Pedestrian survey of the proposed ROW was resumed east of West Military Highway, along a low berm formed from the excavation of a drainage ditch that separates the Edinburg Canal from agricultural fields and forest to the south. Shovel testing was infeasible due to the degree of modification associated with the construction of the old Edinburg Canal, the adjacent drainage ditch with their associated berms (see Figure 4b). Fragments of a small brick wall with concrete mortar were encountered lying on their side, near the west end of the ditch berm during survey (see Figure 1). Its provenience on top of the berm indicates it was not in primary context and was likely redeposited during drainage ditch construction or maintenance.

Fragments of twentieth century bricks, concrete pipe, bottle glass, whiteware ceramics, and three chert flakes were also noted outside the ROW within the plowed field. It seems likely that all these artifacts were redeposited during erosion of the low berm fill after ditch construction. Since the materials are outside of the ROW and no evidence for a site was found in the ROW, no site number was assigned.

IV. <u>INTERPRETIVE DISCUSSION</u>

The following section presents an interpretive overview of the results of archaeological field survey and historic records and literature search, as they pertain to the likelihood of powerline tower construction impacting significant cultural remains.

GEOARCHAEOLOGICAL INTERPRETATIONS

Shovel tests ST1–ST3 appear to have been placed on the T^1 terrace of the river in soils classed as Rio Grande silt loam, "deep, well drained, silty soils on bottom lands" (Jacobs 1981:94). Excavation in ST2 and ST3 encountered metal cans and plastic bags to a depth of 1.5 feet (70 cm), indicating modern redeposition of twentieth century refuse either during flood events or during construction activities related to the berm surrounding the holding pond and pumping station.

Shovel tests ST4–ST6 appear to have been placed on the T^2 terrace of the river in soils classed as Camargo silt loam, "deep, well drained, silty soils on bottom lands" (Jacobs 1981:80). Excavation of ST4 to a depth of 1.3 feet (60 cm) encountered no evidence of twentieth century disturbance, with a few land snails suggesting some degree of natural soil development. Excavation of ST5 to a depth of 1.3 feet (60 cm) encountered a possible buried silty A-horizon, likely of historic origin and buried by construction fill from the Edinburg Canal berm. Excavation of ST6 to a depth of 1.1 feet (40 cm) encountered the same historic A-horizon buried by construction fill and twentieth century trash, just above the water table.

Pedestrian survey east of the West Military Highway appears to have been restricted to the T^3 terrace of the river in soils classed as Reynosa silty clay loam, "deep, well drained, silty soils on ancient stream terraces" (Jacobs 1981:93). No evidence of redeposited bedrock or gravels was noted within the eroded fill of the ditch berm during pedestrian survey of the plowed field next to the ROW.

While no prehistoric cultural remains were encountered in primary undisturbed contexts during shovel testing of the ROW, the potential for deeply buried (and deeply disturbed) remains is highest on the T^1 and T^2 terraces which are still subject to modern flooding today. Shallow but possibly intact remains are more likely present on the T^3 terrace east of West Military Road, as indicated by the few flakes and a flaked cobble noted during visual inspection of the plowed field just south of the ROW.

HISTORICAL INTERPRETATIONS

The project ROW is located within the Joseph Antonio Cantu "porcione," a long lot survey granted to Cantu ca. 1767 by the Spanish government, and may extend into the adjacent Gabriel Manguilla Survey. While these porciones were most likely used for livestock ranching in a manner typical of Spanish Colonial era land grants fronting on the lower Rio Grande, the likelihood of impacting a significant cultural deposit from this era is remote considering the sparse pattern of settlement at that time and the current evidence of landform disturbance noted in the survey. Traditional ranching as the primary land use changed only slightly when Cantu's "Rancho La Lomita" was transferred to the Missionary Oblate Fathers, who founded the La Lomita Mission in the mid-nineteenth century. It seems unlikely that the project will directly or indirectly impact any improvements related to the original La Lomita Chapel site near the river or the more recent St. Peter's Novitiate site (see Figure 1) because both were avoided in the route selection process.

The potential for impacts to historic period sites increases with regard to agricultural and transportation improvements present in the project area. Clearly the proposed project will cross rail transportation and water-pumping facilities that reflect pervasive changes in land use that occurred after the arrival of railroads in the Rio Grande Valley in the early twentieth century. The small railway crossed by the project, originally called the San Benito and Rio Grande Valley Railroad, is one branch of a local area rail system that was developed in the absence of a viable farm to market road network to help local farmers ship produce to nearby markets (Day et al. 1981). While no rail related properties in Hidalgo County are currently NRHP listed, the significance of the "Spiderweb Railway" has been recognized through placement of several official state historical markers located in the county. Furthermore, detailed historical accounting of Rio Grande railroad development has also been published (Allhands 1960).

Similarly, the small pumping plant and associated irrigation canals that occur in the project area are minor components of a vast network of irrigation improvements that are ubiquitous components of the Rio Grande Valley landscape. This aspect of the Rio Grande Valley's heritage has been recognized in various ways, including extensive surveys of the region's heritage tourism resources (Sanchez et al. 1991) and National Register nomination efforts that have recognized the LRG Canal Company Irrigation System located south of the project area and the Mission Pumping Plant located north of the project area. With this aspect of the region's agricultural industrial development so well represented in the National Register it seems unlikely that the pumping plant and irrigation canals within the project area represent resources eligible for National Register listing and detailed Section 106 effect consideration.

A related albeit much altered component of the region's agricultural irrigation development is at nearby Chimney Park (Price 2003), a recreational vehicle park and resort at the location of the former Mission Canal Company Pumping Plant. The historical marker at this site indicates that the massive chimney at this location (see Figure 1) was built in 1907 with brick produced in the adjacent community of Madero. Historical property ownership maps of the area show the plant located directly across the San Benito-Rio Grande Railroad from property owned by the Valley Brick and Tile Company (Figure 5). One corner of the Valley Brick and Tile Company property fronts on the "Old Edinburg Canal Right Of Way," probably because their operations used water drawn from the canal. Waste materials from the demolished pumping plant and the brick and tile manufacturing facility are likely sources for the scatters of brick noted during the pedestrian archaeological survey.

north

0 400 meters

400 0 400 800 feet

Source: Texas Historical Commission, Office of the State Archaeologist

PBSJ
• Engineering
• Environmental Consulting
• Surveying

Figure 5

"UNDATED" HIDALGO COUNTY
PROPERTY MAP

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V. CONCLUSIONS AND RECOMMENDATIONS

Given the negative results of shovel testing west of West Military Highway, and the degree of landscape modification due to canal and drainage ditch construction east of West Military Highway, it is unlikely that shallow prehistoric deposits remain intact within the proposed ROW. Deeper mechanical testing efforts are not recommended because the amount of excavation required to test the full depth of project-related impacts would cause far greater disturbance to possible cultural deposits than drilling of the actual utility pole locations. Therefore, once the precise locations of utility poles can be determined and staked in the ROW with a high degree of accuracy, monitoring of construction is recommended in the T^1, T^2, and T^3 terraces at Poles #1, #2, and #3, to record any cultural materials displaced from deeply buried contexts.

With regard to twentieth century cultural materials observed as redeposited scatters of brick, glass, ceramics at berms surrounding the pumping plant holding pond and along the old Edinburg Canal, no further archaeological or historical testing is recommended. The need for such research can be assessed based on the potential information yield presented by any historic period cultural deposits observed during the recommended construction monitoring program. In the event that human skeletal remains are encountered, construction in the vicinity should be stopped and the THC notified to determine the proper treatment of the remains.

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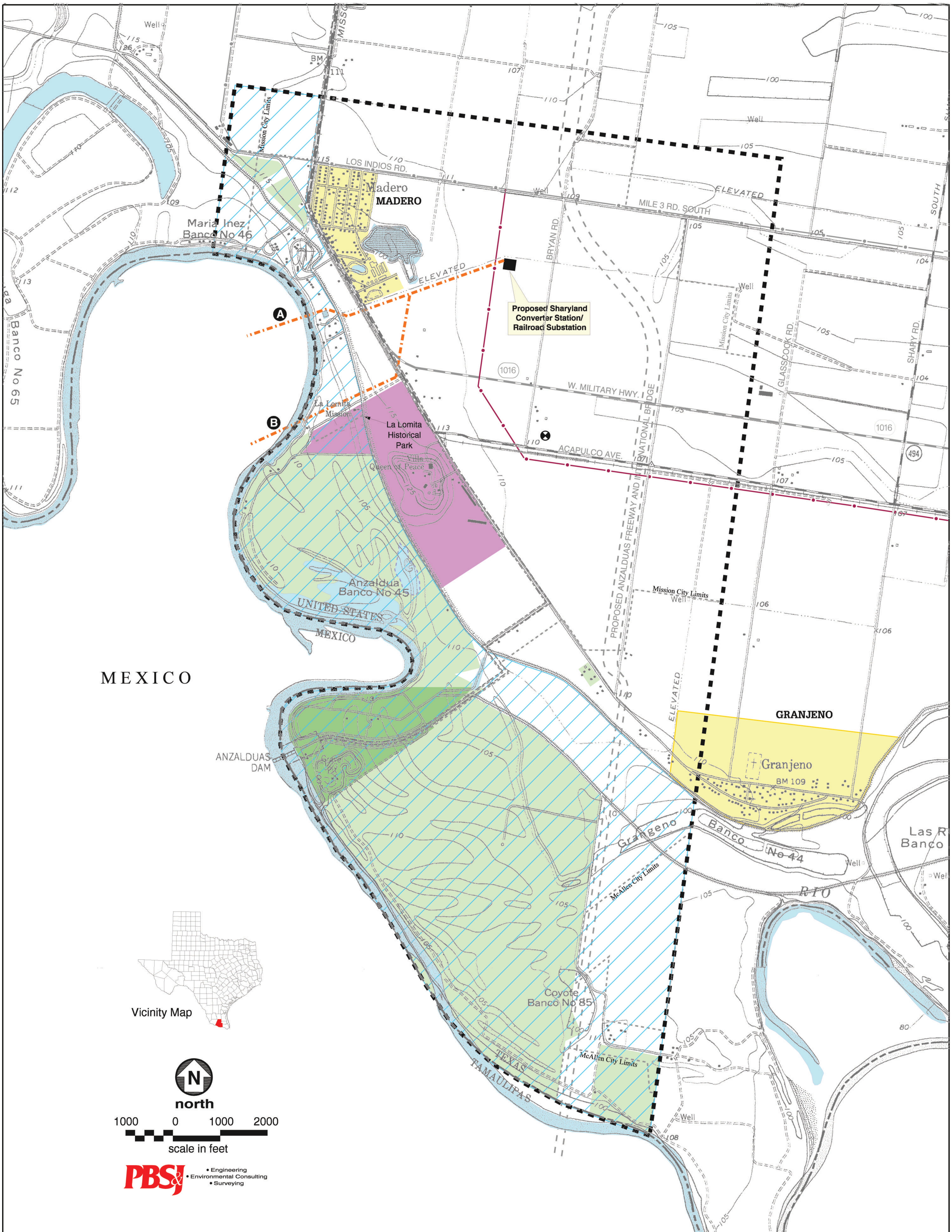


Study Area Boundary	100-Year Floodplain
City Limits	La Lomita National Register Historic District
Existing 69-kV Transmission Line	City/Community
Approved Sharyland Utilities 138-kV Transmission Line	Anzalduas County Park
Alternative Route	Lower Rio Grande Valley National Wildlife Refuge
Electronic Communications Tower	Wetlands from National Wetland Inventory

Figure 2-3

Primary Alternative Routes and Environmental/Land Use Constraints

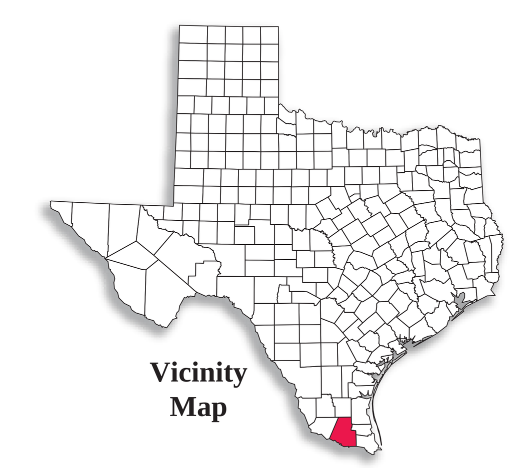
SHARYLAND - DC MEXICO TIE PROJECT

Base Map: USGS 7.5' Quadrangles; Hidalgo and Mission, Texas

Revised: 03/01/04

I:/projects/hc1/sharyland/441216/doe ea/cad/fig2_3.dgn

Applicant's Preferred Alternative (Route A)
Alternate Route (Route B)
Existing 69-kV Transmission Line
Approved Sharyland Utilities 138-kV Transmission Line



north
400 0 400 800 feet
Date of Photography: August 2000

PBSJ
• Engineering
• Environmental Consulting
• Surveying

Figure 2-4

APPLICANT'S PREFERRED ALTERNATIVE (ROUTE A) AND ALTERNATE (ROUTE B)

SHARYLAND - DC MEXICO TIE PROJECT

Revised: 03/01/04